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<p style="text-align:center">Authenticity, reproducibility, and non-fungibility:</p>

<p style="text-align:center">The Evolution in the Way of Seeing</p>

Introduction

On 16 February 2022, digital reproductions of six precious masterpieces of Italian art were

exhibited in London (Figure 1). The four major Italian museums participating in the exhibition,

including the Uffizi Gallery in Florence, decided to make their first attempt to sell NFTs (short

for Non-Fungible Tokens) of painting masters from Leonardo da Vinci to Modigliani. These

digital replicas are displayed on ultra-high-resolution electronic screens, installed in replica

frames identical to their original versions, and located in a corner of the planet—a gallery in the

physical world. Each of these works is priced between 100,000 and 250,000 euros, and the

museum claims the sales will be used to fund their art conservation programs. At the opening of

Figure 1 "Museums benefit from NFTs
", Goad News, 2022, https://
goadnews.com/museums-benefit-from-
nfts/. Accessed 18 Apr. 2022.

this exhibition, a philosophical question has been explored by the audience, that is, whether digital reproductions have a similar viewing experience to the originals (Rea).

As early as 1981, Walter Benjamin expressed his opinion in *The Work of Art in the Age of Mechanical Reproduction*: "Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be (W. Benjamin 8)." However, with the iteration of technology, we have moved from the industrial age where Benjamin lived to the digital age. It seems that people of the present are trying to reconstruct the "unique existence" of artworks through crypto-technology in the nascent birth of Web 3.0. The way that NFT exists as a carrier of digital art breaks through the mechanical reproduction mode of commodities in mass production: the purchased work is no longer one of the thousands, but only belongs to the buyer. The NFT art boom swept in long before these galleries took action: in addition to the replicas of physical artworks, there were also digital paintings, 3D scenes, generative arts, and virtual fashion, all of these pixels and codes became commodities for sale. Such unique virtual commodities are replicating on every screen by means of the network and media that anyone can save a copy to their USB stick or hard drive, but the only digital version sold at an exorbitant price can only be officially owned by few persons. This makes NFT artworks contradictory in terms of reproducibility and authenticity. Therefore, the works of art in the digital age are destined to have a unique way of seeing.

Thing from the past to the present, like archaeological layer, is operationally embedded in the technology. This applies to digital artworks as well. In this paper, I will analyze NFT art from the perspective of media archaeology and explore various aspects of digital artworks. Through the technical definition, media history, and social effects of NFT, I will dialectically examine the

ways in which it is viewed, not only in terms of its visual experience, but also in terms of its

impact on the viewer and the larger society.

Works of Art on the Chain of Technology

How are pixels and bytes sold? It starts with the definition of Non-Fungible Token, "A way to

represent anything unique as an Ethereum-based asset." ("Non-Fungible"). It can be understood

as a computer file combined with proof of ownership and authenticity, like a contract that the file

belongs to the purchaser. These documents are stored on Ethereum in order to be protected from

tampering (Chow). Ethereum, as a decentralized application platform built on blockchain

technology, allows anyone to build and use applications in it. It is often considered to be the

second most popular cryptocurrency after Bitcoin. This network uses "Distributed Ledger" so

that all transactions and records can be verified. Theoretically, NFT's storing feature is not

limited to artworks, it can host "anything unique" and transform all kinds of documents into

commodities.

But why are artworks the biggest headliners? One of the biggest reasons is the non-fungibility of

NFT. If it corresponds to the physical world, fungible goods and non-fungible correspond to each

other just as commodities and collections. Fungible items are common in life, such as gold,

currency, etc. A certain gram of gold bar can be exchanged for another bar of the same gram in

which their market value is equal and can be substituted for each other; non-fungible items are,

as the word suggests, not exactly equivalent, the best example being works of art. Even in the

case of print art, based on the same stencil its each printing is numbered differently. Even if two

prints by an artist look similar, they are still not interchangeable and have different values and

Figure 2 LarvaLabs. "Cryptopunk", *LarvaLabs*, 2017, https://
www.larvalabs.com/cryptopunks. Accessed 18 Apr. 2022.

performances in the art market. In Web 3.0, NFT is precisely a file format that divides non-

fungibility from fungibility.

Therefore, it can be said that the combination of NFT and art is almost inevitable. The

Cryptopunk project (Fig.2), created by Larva Labs founders Matt Hall and John Watkinson in

2017, is one of the most successful early examples of the combination of cryptography and

artwork. Ten thousand avatars, only 24x24 pixels in size, were numbered and sold. Uniqueness is

seen as central to the creation of the characters, with each punk boy and girl generated by an

algorithm and random codes that determines a particular combination of features such as skin

color, hairstyle, and accessories. According to Larva Labs, "We ran the generator hundreds of

times, reviewed the results, and made adjustments. Then, with little fanfare, we ran it one last

time, linked it to the Ethereum smart contract that we deployed, after which

the *Cryptopunks* were completely set in stone."（"10 Things"） The algorithm and code dictated

that no punk looks the same, and there are bound to be some that are more common and others

that are more rare (like aliens and zombies). These avatars were even given out for free at first,

only to skyrocket in value a few years later. As of today, a blue-skinned alien punk has set a

record for the highest sale of a single punk, at $23,700,000. The contrast between cryptopunk, an

8bit-sized image, selling for such a high price is inevitably perplexing from an artistic point of

view. But for collectors, the historical status of this project is irreplaceable. What makes *Cryptopunk* so successful is not only the scarcity value brought by the non-fungibility of the tokens, but also its pioneering status in crypto art. In addition to *Cryptopunk*, there are a number of similar groundbreaking NFT art projects such as *Cryptokitty*. These projects directly defines NFT and crypto art in their practices.

Tracing Back the Non-fungibility

NFTs, as a new data carrier, and digital art as a new visual expression, are technically and culturally bound up with the media of the past. In *Code and Clay, Data and Dirt*, Shannon Mattern reinterprets the media and its history in the context of smart cities full of sensors and networks, revealing new models of how the contemporary metropolis works. As the carrier of media, the city itself is a complex multi-sensory media with a layered network, and all seemingly modern media are actually an integration of past media (Mattern 12).

The visibility of NFT art is inseparable from social media and the Internet. While NFTs cannot be minted and traded on social media, social media has passively become a hotbed of crypto art. Discord is the most representative social platform, where Web 2.0 and Web 3.0 have established the closest connection. It can be said that almost all NFT projects have their own independent Discord servers, and the chat robots in them are constantly repeating product images and updating sales records, so that NFTs are constantly being known to more people in the repetition and circulation. The value of digital artworks rely on such technological reproduction: rolling news is like stock data, with every transaction redefining the value of the work.

If we trace the relationship between art and media technology in the past, we can find that photography and the mechanical reproduction of advertising have a similar function. The biggest feature of traditional works of art is uniqueness. In his 1982 *Way of Seeing*, John Berger mentioned that the uniqueness of a painting lies in the place in which it is displayed. Paintings can be transported, but never in two places at the same time. However, the invention of the camera destroyed the uniqueness of the painting, and the photograph divided the semantics of the artwork, giving it the opportunity to appear in different situations. But it is undeniable that photography has also given the original a new status: being the authentic version of a reproduction (Berger). To some extent, the meaning of the original is multiplied with different times and spaces through the reproduction, allowing it to gain more opportunities to be recognized and interpreted. The value of the original is also redefined in the circulation of reproductions.

Then came the era of mass media and mass production. Advertising technology and production complement each other, and commodities are promoted through the reproduction of advertisements. The ensuing iterations of technology have shifted content from traditional media to the internet and urban fabric, with ubiquitous mobile devices and screens carrying resizable images filled with vibrant colors that print media cannot. Commodities constantly change their roles in the iteration of the Internet: Web 1.0's static webpages have almost no user experience at all, commodities and advertisements are only visible through URLs, and mechanical reproduction is amplified in network transmission, reaching every user on the earth; Web 2.0 makes virtual transactions feasible. From digital records to subscriptions, centralized media applications provide various services and experience products; and today with the rise of Web

Figure 3 Winkelmann, Mike (Beeple). "FIRST EMOJI", *ArtStation*, 2020, https:// beeple.artstation.com/ projects/0nzDVw.

Figure 4 Dali, Salvador. "Sleep", *Scene360*, 1937, https://scene360.com/ art/86743/salvador-dali-fears-and-fascinations/.

3.0, digital files are embedded into technology and codes, becoming commodities themselves. At this opportunity, art works have returned to the public eye with a high profile, and are linked to commodities again.

When going back to the NFT art itself and look closely at the connection between crypto art and past artistic mediums, the following will be found: NFT art simulates traditional artworks of the Authenticity. The technological non-fungibility gives the digital file original identity to make it more like an art piece in form. While the content of NFTs references a lot from traditional artworks and pop cultures in aesthetics. In Beeple's (Mike Winkelmann) 2020 work *FIRST EMOJI* (Figure 2), we can see a scene where an emoji monument is in scaffolding. The faded warm tones are filled with a nostalgic aesthetic, and the contrast between the giant objects and the empty background is reminiscent of the paintings of the surrealist painter Dali (Figure 3). Then look at the texture of the picture. Thanks to 3D technology, the sculpture looks so realistic, with fine details that make the work even look like a photograph. Realism has always been pleasing to the audience, and this is reflected in the market's preference for 3D art. As of March

2021, according to a study by Estorick, Waters et al on the SuperRare marketplace, "3D art is the most viewed with higher selling points."(Estorick) It's easy to spot the NFT art's association with the past here: The pursuit of recreating reality through painting in the past is now transformed into the expectation of simulating the world through technology.

Furthermore, the appropriation of the Internet elements and popular culture by NFT works can also find relevance in ready-made art. Duchamp moved urinals as a commodity into art museums; Beeple incorporated emojis from digital communications into NFT artwork. The acts are similar in nature, information is extracted and given artistic value. If the concept of ready-made products liberates the commodified substances in real life with the concept of art, then NFT art uses crypto-technology to extract free information in cyberspace (Joselit). This makes NFT art a myth of today. Barth defines myth today as a structure that gives things new meaning, a symbol that conveys ideology to the world. Myth is first and foremost speech, and Barthes cites Saussure's semiotic structure of language and constructs new layers upon it as a larger cultural meaning embedded in language. In this sense, myths can in turn be other visual languages, such as images and actions (Barthe 113). When pop culture elements are separated from their original backgrounds, their symbolic meanings are transformed in the process of recombination and become symbols permeated by ideology. The myth in *FIRST EMOJI* is embodied by the signifier of the smiling face in scaffolding to the signified of digital communication and technology. The myth in the image determines how the viewer approaches its psychological level and value identification.

Shining of the Digital "Aura"

The aura of historical objects as defined by Benjamin can be illustrated by the aura of natural

objects, which can be understood as unique phenomena. The natural aura can be experienced on

a summer afternoon by observing the projections of mountains or tree branches on the horizon

(W. Benjamin 5). As a historical object, crypto art has changed the way of seeing digital art, and

has a very special aura and social phenomenon.

First of all, the prevalence of the NFT art market is the art re-education for the public. The

diversity of crypto art aesthetics is a complexity of tradition, pop culture, and computer

generation. Whether it's a reproduction of a work of art, a tribute to art, or some innovative

project, it's multiplying the meaning, boosting the visual experiences of people. For example,

QuantArt is releasing some exclusive NFT collections related to physical works of art, including

works by Salvador Dali and Pablo Picasso. This gives viewers who have not previously known

these masterpieces the opportunity to rediscover these histories in new media.

Secondly, under the influence of the most prestigious projects, the broader NFT art market has

become increasingly active, and more and more ordinary people are participating in the creation

and trading of digital art. As of February 2022, the number of users with at least one transaction

on the NFT trading platform Opensea has exceeded 1 million ("Total OpenSea").

In the previous Web 2.0 model, ordinary artists shared their works on social media and earned

income from likes and views, but most of the benefits belonged to the social platform, and

creators only got very little part. A better situation is to sell the work offline through the

popularity gained through the Internet, but only if the work has a physical form. The

opportunities provided by Web3.0 and NFT to the vast number of digital artists allow them to no

longer be limited to earning meager rewards by exposure, but to transform their works into real

commodities, creating a virtuous circle among fans. This has strengthened the protection of

copyright and intellectual property rights of digital artists to a certain extent, so that more artists
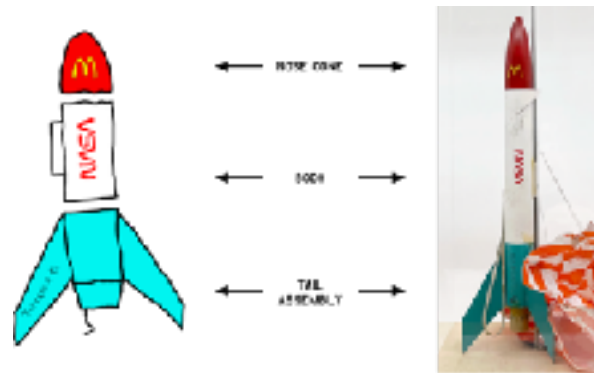
are willing to participate.

Figure 5 Sachs, Tom. "How It
Work", *Rocket Factory*, 2021, https://
tomsachsrocketfactory.com/how-it-works.

The active market also gives incentives to more experiments, giving birth to some very

exploratory projects. Contemporary artist Tom Sachs' *Rocket Factory* (Figure 5) is a project that

transcends dimensions, blurring the lines between virtual and real. Each small rocket is split into

three parts: nose cone, body and tail assembly. These parts are represented by the corresponding

sketches, which can be purchased separately, and then freely assembled by the seller into a

complete sketch rocket NFT. It is worth noting that once these virtual rockets are assembled, the

studio will actually make a small rocket about 100 feet in size in reality based on the avatar of

the rocket. These mini rockets are actually going to be "launched" and then collected and sent to

buyers along with the launch video. According to the studio, the virtual rocket illustration, the

physical rocket, and the video "form a Holy Trinity", together constitute a bizarre inter-

dimensional NFT ("Tom Sachs"). There is also the illustration project *Crypto Baristas*, which

sells digital illustrations of various baristas on Opensea and uses revenue to support real-life, coffee initiatives, focusing on social responsibility and sustainable environmental issues. These attempts allow NFT art to break through the virtual limitations and make transactions more practical. After all, pure electronic document transactions are still limited in the scope of spiritual pursuits when the world is based on reality. Projects linked to reality may be more attractive to investors.

Finally, similar to any art communities, NFT art also builds interpersonal networks. This is a new community culture where technology, art and finance are integrated. The relationship between artists, technologist, investors, and hobbyists are interwoven into a complex web of people. Rome wasn't built in a day, nor was Beeple shaping the glory of NFT auction prices in a day. Behind the sky-high price, what cannot be ignored is his huge fan base of 2.5 million on social media. Beeple is known for being prolific: for 14 years, the artist has released new digital artworks every day (Kastrenakes). Persistence creates a more credible image for him, strengthening the connection between the artist and his fans or investors. Another manifestation of the community is the new social approach created by NFT, which can be illustrated by the 2021 *VeeFriends* (Figure 6) sales model. This project is based on some rough sketch digital works. Different sketches N are divided into different levels, and buyers are given different levels of authority through differences in smart contracts. All those who purchase these tokens can gain access to "VeeCon" to participate in events organized by organizer Gary on various topics such as business, creativity, marketing and entrepreneurship. Among them, in this project, the existence of art may just design the "ticket" of the event. Through the cover of the ticket,

Figure 6 "VeeFriends", *VeeFriends*, 2021, https://veefriends.com/faqs.

VeeFriends is actually a transaction of "senior club" admission tickets, creating a capitalized community.

Opportunity or Concern

After a cursory look at the concept of NFT art. There are a few concerns that need to be taken with a conservative attitude.

Historically, art has always been tied to power and wealth status, and encrypted art is no exception, especially on the basis that its financial attributes are stronger than artistic attributes. The popularity of NFT art works is almost explosive. Many have not been precipitated by time, but have been crowned with such a high status and have incredible prices. Another Beeple work, *Everydays: The First 5000 Days*, set an art auction record in March 2021, selling for nearly $70 million. It should be noted that Monet's *Water Lilies* sold for just $54 million at Sotheby's in 2015. It is difficult to say whether an NFT work matches its value, especially when the transaction is completely anonymous.

In this sense, the relationship between the crypto art market and neoliberalism is evident. According to Arden and Siegelbaum, contemporary design is subject to neoliberalism and in turn

serves as an important factor in the expression and implementation of neoliberalism. The text mentions that data-enabled blockchains and cryptocurrencies have facilitated the rapid flow of capital and deregulation and also the financialization of data (Arden 4). There is also a lack of regulation in transactions in the encrypted art market: it is easy for a person who has multiple Ethereum wallet accounts at the same time to achieve backward buying and selling, creating false data to speculate on higher prices. This is a fact that has already happened. In addition, some blockchain entrepreneurs are trying to create libertarian utopias with a new commodity like NFT, facilitating the flow of capital by enabling its popularization through visual and commercial design. as Achille Mbembe says in the interview: we have evolved from the machine age to the algorithmic age, and the upgrade of modern technology has led to the emergence of computational capitalism, digital capitalism that is capturing people's minds and spiritual lives and commodifying them. Technology is moving toward "general intelligence" and self-replication, turning people into artifacts (Bangstad). NFT art is precisely a new kind of spiritual commodification: the timing and business opportunities of the technological upswing that capitalists have seized, shaping a vision of a better metaverse and digital future through advertising and mass media, sold in the form of virtual documents. The decentralization of blockchain technology has created the appearance of crypto art being "democratized", but its essence is still a game of capitalists that limited to the players, with the potential to widen the gap between rich and poor.

While blockchain creates opportunities for digital artists, its community and technology are destined to be biased. White and male-dominated finance and technology marginalize women and racialized identities, both as artists and in other roles. The statistics show that only 16% of

NFT sales go to female artists (Assil); less than 4% of the artwork comes from African artists, less than 2.5% from Latin America, and less than 1% from Near Eastern artists (Reader). Ruha Benjamin in *Race After Technology* introduces the reader to the issues of social inequality embedded in the technological layer in the age of algorithms and the persistence of these issues throughout history. The bias of technology is not intentionally encoded, but rather fueled by the quest for objectivity, profitability, and progressiveness (R. Benjamin 5). This unfairness is encoded into Web3 technology and is reflected in the NFT art market. At its worst, racism can still rage in the crypto market due to its lack of supervision. This is reflected in a racist project based on George Floyd in December 2021, with bloodshot eyes and a series of exaggerated depictions that are highly offensive.

Last but not least, the tokenization of artworks consume huge amount of energy. Environmental pollution is a common problem with blockchain technology. This makes the art market not eco-friendly. There is artist like Beeple says his artwork will be carbon "neutral" or "negative," which means to offset the emissions caused by his work by investing in renewable energy, conservation projects or technologies that clean carbon dioxide from the atmosphere. However, the boom in the market has made the minting process of artworks so frequent that the energy consumed by well-known artists is hardly different from that consumed by ordinary artists uploading their works. This is exactly the problem that needs attention. Just as Nathan wrote. "This latest phase of capitalism feels somewhat similar to the first - except that instead of speculating on colonial land grabs and the corpses of slaves, celebrities and GIFs are minted into commodities. This seems less harmful at the moment, until we all become tokenized assets, along with air, water and other things we need to survive."(Nathan)

Conclusion

The way of seeing artworks is in constant evolution. In this paper, I introduced the definition of

crypto art, analyzed its media history, then observed some of its social impacts, and finally,

argued some pitfalls and concerns. To summarize, artworks in the digital age are redefined by

emerging technologies that alter the intrinsic connection between author and viewer. The work of

art reconstructs its authenticity and reinforces its value again through technological reproduction.

There is bright side to crypto art: it is an opportunity for the future of art and technology to

merge together. But as a new industry, there are drawbacks to its development that cannot be

ignored that can take the effort of artists and designers.

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